

Appl. No. 10/628,694  
Amdt. Dated January 13, 2005  
Reply to Office action of September 22, 2005

Amendments to the Claims:

This listing will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently amended) A vehicle seat, comprising:
  - a seat frame;
  - a spring assembly supported by said seat frame; and
  - an upholstery assembly covering at least part of said seat frame and spring assembly;

said spring assembly including a central support member adapted to support at least most of a load of a vehicle occupant seated in said seat, a plurality of spring members supporting said central support member relative to said seat frame, and a plurality of displacement sensors each for detecting a displacement of a selected point of said central support member relative to said seat frame;

at least one of said displacement sensors being arranged in parallel with one of the spring members to measure a change in the distance between the corresponding selected point of said central support member relative to a corresponding part of said seat frame.

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2. (Original) A vehicle seat according to claim 1, wherein said selected points include peripheral points of said central support member.
3. (Original) A vehicle seat according to claim 1, further comprising a control unit for producing a control output according to outputs from said sensors, said control unit being incorporated with a CPU programmed so as to identify a load distribution on said central support member.
4. (Original) A vehicle seat according to claim 3, wherein said load distribution includes a distribution in a fore-and-aft direction.
5. (Original) A vehicle seat according to claim 3, wherein said load distribution includes a distribution in a lateral direction.
6. (Original) A vehicle seat according to claim 3, wherein said CPU is programmed so as to evaluate a sum of the outputs of said sensors.

7. (Original) A vehicle seat according to claim 6, wherein said CPU is programmed so as to compare the sum of the outputs of said sensors with a threshold value for identifying the identity of a vehicle occupant.
8. (Original) A vehicle seat according to claim 1, wherein said central support member includes a grid or mesh formed by a substantially straight wire member.
9. (Original) A vehicle seat according to claim 1, wherein said central support member includes a grid or mesh formed by a wavy wire member.
10. (Original) A vehicle seat according to claim 1, wherein said central support member includes a grid or mesh formed by a combination of a substantially straight wire member and a wavy wire member.
11. (Original) A vehicle seat according to claim 1, wherein said spring members comprise tension coil springs.

12. (Original) A vehicle seat according to claim 1, wherein each of said displacement sensors is incorporated in a corresponding one of said spring members.

13. (Original) A vehicle seat according to claim 1, wherein each of said displacement sensors comprises a sensor main body attached to said seat frame, a spring loaded pulley rotatably supported by said sensor main body, a string wound around said pulley and having one end attached to said central support member, and an angular sensor incorporated in said sensor main body for detecting a rotational angle of said pulley.

14. (Currently amended) A vehicle seat according to claim 13, wherein a pivot center of said pulley is located above in such a manner that said pivot center is below a level of said central support member under an unloaded condition of said seat but above a level of said central support member under a fully loaded condition of said seat.

15. (Original) A vehicle seat according to claim 1, further comprising a sub frame attached to said seat frame and having said spring assembly incorporated therein.

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16. (New) A vehicle seat according to claim 1, wherein at least one of said displacement sensors includes a pair of electrodes that are attached to respective ends of the corresponding spring member to oppose each other so that a relative distance between the two electrodes may be measured as an electrostatic capacitance between the two electrodes.
17. (New) A vehicle seat according to claim 16, wherein said electrodes are disposed coaxially with each other so as to be telescopically moveable relative to each other.
18. (New) A vehicle seat according to claim 11, wherein at least one of said displacement sensors includes a pair of electrodes that are attached to respective ends of the corresponding tension coil spring to oppose each other so that a relative distance between the two electrodes may be measured as an electrostatic capacitance between the two electrodes.
19. (New) A vehicle seat according to claim 18, wherein said electrodes comprise cylindrical members that are disposed coaxially with each other and with respect to the tension coil spring so as to be telescopically moveable relative to each other.